

Appl. No. 10/687,763

REMARKS/ARGUMENTS

Claim Rejections – 35 USC 102

The Examiner rejects claims 1, 6, 7, 14, 17, 21, 22, 27, 30 and 31 under 35 USC 102(e) as being anticipated by United States patent US 6,542,647 ("Minemoto"). In response, independent claims 1, 17, and 30 have been amended so as to recite the limitation of the "conducting microstrip line". Applicant notes that the remaining claims rejected under 35 USC 102(e) each depend on one of claims 1, 17 and 30 and therefore also include the limitation of the conducting microstrip line. Applicant submits that the claims as amended are not anticipated by Minemoto, as Minemoto teaches away from a conducting microstrip line.

As shown in Figure 1 of the present application, a current signal $I(t)$ 20 is passed through a conducting microstrip line 14 so as to generate a time varying magnetic field $b_z(t)$ 22 having a component along the z-direction. By contrast, Minemoto teaches the use of a coil to generate a time varying field. This can be seen in Figures 1-5 of Minemoto. Applicant submits that employing a conducting microstrip line provides for advantages over the coil used in Minemoto. Coils have inductances and cannot support the delivery of electrical waveforms at the same high frequencies as a conducting microstrip line. Such inductances would limit the performance of the device in Minemoto. By contrast, employing a conducting microstrip line allows for a stronger modulating magnetic field with less driving current, and allows for a more compact device where the electrical signal may be only delivered where the optical interaction takes place. Furthermore, employing the conducting microstrip line removes the necessity of an impedance matching device. Minemoto uses an impedance matcher, such as the impedance adjuster 6 in Figure 1, to overcome the large inductance of the coil. By contrast, the microstrip transmission line of the present application does not require any impedance matching.

In view of the foregoing, Applicant submits that the feature of the "conducting microstrip line" is novel and inventive over the disclosure of Minemoto. Since claims 1, 6, 7, 14, 17, 21, 22, 27, 30 and 31 each include this feature, the Examiner is respectfully requested to reconsider and withdraw the rejection under 35 USC 102(e).

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Claim Rejections – 35 USC 103

The Examiner rejects claims 4, 5, 19 and 20 under 35 USC 103(a) as being unpatentable over Minemoto. In response, Applicant notes that each of claims 4, 5, 19 and 20 depend on one of independent claims 1 and 17, which have been amended to include the feature of the “conducting microstrip line” as noted above. Therefore, Applicant submits that claims 4, 5, 19 and 20 are novel and inventive over Minemoto for similar reasons provided above. The Examiner is respectfully requested to reconsider and withdraw the rejection under 35 USC 103(a).

Allowable Subject Matter

The Examiner states that claims 2, 3, 8-11, 13, 15, 23-24, 28 and 32-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In response, Applicant provides the following amendments and comments:

- Claims 2, 8, 9, and 15 have each been amended into independent form with all limitations from base claim 1 as originally filed. There are no intervening claims.
- Claims 23, 24, and 28 have each been amended into independent form with all limitations from base claim 17 as originally filed. There are no intervening claims.
- Claims 32 and 34 have been each amended into independent form with all limitations from base claim 17 as originally filed and intervening claim 31.
- Claims 3, 10, 11, 13, and 33 each depend on one of the claims noted above that has been rewritten into independent form including all of the limitations of the base claim and any intervening claims. Therefore, none of claims 3, 10, 11, 13, and 33 depend upon a rejected claim.

In view of these amendments, none of claims 2, 3, 8-11, 13, 15, 23-24, 28 and 32-34 depend upon a rejected claim and therefore such claims are allowable.

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Other

Claim 5 has been amended so as to correct a typographical error, namely to replace "Bismith" with "Bismuth".

Claim 13 has been amended so as to depend upon claim 1 instead of claim 2.

Upon allowance of the generic claims, Applicant requisitions the Examiner to allow withdrawn claims 12, 16, and 29. In view of the fact that the Examiner has included claim 34 to be allowable, the newly submitted claims no longer refer to this claim as being withdrawn.

In view of the foregoing, early favorable consideration of this application is earnestly solicited.

Respectfully submitted,

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